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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/593,628

01/16/2007

Itay Katz

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07/13/2010

THE NATH LAW GROUP

112 South West Street

Alexandria, VA 22314

EXAMINER

SHERMAN, STEPHEN G

ART UNIT

PAPER NUMBER

2629

MAIL DATE

DELIVERY MODE

07/13/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/593,628	Applicant(s) KATZ, ITAY	
	Examiner STEPHEN G. SHERMAN	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to the amendment filed 30 June 2010. Claims 1-22 are pending.

Response to Arguments

2. Applicant's arguments filed 30 June 2010 have been fully considered but they are not persuasive.

On pages 12 and 13 of the response the Applicant argues the objection to the specification stating that neither claim 21 or 22 recites "signals" and thus the specification does not need to provide antecedent basis for the signals. It is clear that the Applicant failed to understand what the Examiner stated in the Office action. The Examiner objected to the specification for failing to provide antecedent basis for the claimed "program storage device" and "computer readable medium" (i.e. the specification needs to provide support for these limitations) and then merely explained that since the Applicant does not recite anything about "signals" in their specification, that the claims would not be rejected under 35 USC § 101. However, in light of new guidelines based on MPEP 2111.01, claims 21 and 22 are newly being rejected under 35 USC § 101 as detailed below.

On pages 13-17 the Applicant argues the rejection of the claims with respect to the Horiki reference. The Applicant's only argument is that claim 1 recites "not involving

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background information in an image" and that Horiki teaches that the contour of the finger is extracted, but that Horiki doesn't teach how it is extracted and as such it fails to teach or suggest of a processor configured to "detect a predetermined object in one or more images obtained by the camera using an object recognition algorithm not involving background information." The Examiner respectfully disagrees.

The Applicant details on page 1 of their specification that devices which are mobile cannot use algorithms which use background information to detect an object because the background image would not be reliable. Horiki specification details a mobile device. Thus as admitted by the Applicant, Horiki cannot use an algorithm which uses background information. Thus, the detection algorithm taught by Horiki to detect the contour of the user's finger doesn't involve background information as recited in the Applicant's claims. Further, as details below, the Applicant's specification fails to support an algorithm that doesn't use background information, and in fact never details how the object is detected without using background information. Regardless, in the broadest reasonable interpretation of the claim, as long as the object is detected without relying on the background information then an algorithm "not involving background information" is used to detect the object. Thus as detailed in paragraphs [0131] and [0132] of Horiki the object is detected by detecting the contour, and thus since it is a mobile device the background cannot be relied upon and thus the contour is extracted without relying on the background information and therefore an algorithm is used which does not "involve" background information (i.e. the algorithm not "involving" background information does not mean that background information is not used but rather that the

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background being constant is not necessary for the object to be detected, i.e. the background image is not relied upon for the detection.). Therefore, the Horiki discloses all of the limitations of the claims and the rejection is maintained.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 21 and 22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 21 and 22 each respectively recite “a program storage device readable by machine” and “a computer program product comprising a computer useable medium”
The broadest reasonable interpretation of a claim drawn to a computer readable medium (also called machine readable medium and other such variations) typically covers forms of non-transitory tangible media and transitory propagating signals *per se* in view of the ordinary and customary meaning of computer readable media, particularly when the specification is silent. See MPEP 2111.01.

The USPTO recognizes that applicants may have claims directed to computer readable media that cover signals *per se*, which the USPTO must reject under 35 U.S.C. § 101 as covering both non-statutory subject matter and statutory subject matter. In an effort to assist the patent community in overcoming a rejection or potential rejection under 35 U.S.C. § 101 in this situation, the USPTO suggests the following approach. A claim drawn to such a computer readable medium that covers both transitory and non-transitory embodiments may be amended to narrow the claim to cover only statutory embodiments to avoid a rejection under 35 U.S.C. § 101 by **adding the limitation “non-transitory”** to the

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claim. *Cf. Animals -Patentability*, 1 077 Off. Gaz. Pat. Office 24 (April 21, 1987) (suggesting that applicants add the limitation "non-human" to a claim covering a multi-cellular organism to avoid a rejection under 35 U.S.C. § 101). Such an amendment would typically not raise the issue of new matter, even when the specification is silent because the broadest reasonable interpretation relies on the ordinary and customary meaning that includes signals *per se*. The limited situations in which such an amendment could raise issues of new matter occur, for example, when the specification does not support a non-transitory embodiment because a signal *per se* is the only viable embodiment such that the amended claim is impermissibly broadened beyond the supporting disclosure. *See, e.g., Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473 (Fed. Cir. 1998).

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims recite "detect a predetermined object in one or more images obtained by the camera using an object recognition algorithm not involving background information" however, the Applicant's specification recites that this involves using a segmentation algorithm (see page 2, line 19 to page 3, line 19) which details that stable sets of pixels are obtained and then an object recognition scheme is used on the stable sets to identify the object. This means that the algorithm used by the Applicant might find stable sets of pixels that are from a background image and an object, and then

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identifies the object using a recognition scheme. Thus the Applicant's invention actually detects an object using background information which contradicts the Applicant's claim language. Further, the Applicant never described in the specification how the objects in detected "not involving background information in an image." Therefore, the specification fails to provide sufficient written support for the claim language as presented.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 3 and 5-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Horiki (US 2002/0140667).

Regarding claim 1, Horiki discloses a system for inputting operation system (OS) commands to a data processing device comprising:

- (a) a video camera capturing images of a viewing space (Figure 6a, 611); and
- (b) a processor (Figure 7, 701/702/703) configured to:

i) detect a predetermined object in one or more images obtained by the camera using an object recognition algorithm not involving background information in an image (Paragraph [0131]);

ii) extract one or more image analysis parameters of the object in the one or more images obtained by the camera (Paragraph [0132]); and

iii) for each of one or more motion detection tests:

(I) applying the motion detection test to image analysis parameters extracted during a recent time window (Paragraphs [0136]-[0138]); and

(II) executing an operating system command associated with the motion detection test if the motion detection test succeeds (Paragraphs [0134] and [0136]-[0138]).

Regarding claim 3, Horiki discloses the system according to claim 1, wherein the predetermined object is a finger or a stylus (Figure 8).

Regarding claim 5, Horiki discloses the system according to claim 1, wherein one or more of the image analysis parameters is history dependent (Paragraph [0138]).

Regarding claim 6, Horiki discloses the system according to claim 1, wherein one or more of the image analysis parameters is selected from the group consisting of:

(a) a location of a tip of the object in an image;

(b) a width of the object in an image;

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- (c) a length of the object in an image;
- (d) an orientation of the object in an image (Figures 10-12);
- (e) a speed of the object at a time the image was obtained by the camera;
- (f) a change in the width of the object at a time the image was obtained by the camera;
- (g) a rate of rotation of the object at a time the image was obtained by the camera;
- (h) an image analysis parameter having a first value if the object is detected in the image and a second value if the object is not detected in the image.

Regarding claim 7, Horiki discloses the system according to claim 1 wherein one or more of the motion detection tests is a motion detection test detecting a motion selected from the group consisting of:

- (a) during the time window the object approached the camera;
- (b) during the time window the object moved away from the camera;
- (c) during the time window the object first approached the camera and then moved away from the camera;
- (d) during the time window the object disappeared from the viewing space of the camera;
- (e) during the time window the object moved in a predetermined path;
- (f) during the time window the object rotated,
- (g) during the time window the object was stationary,

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- (h) during the time window the object moved (Paragraph [0136]);
- (i) during the time window the object performed a flicking motion;
- (j) during the time window the object accelerated;
- (k) during the time window the object decelerated;
- (l) during the time window the object moved and then stopped.

Regarding claim 8, Horiki discloses the system according to claim 7 wherein one or more of the motion detection tests is a motion detection test detecting that the object moved in a predetermined path during the time window (Paragraph [0137]).

Regarding claim 9, Horiki discloses the system according to claim 1 wherein one or more of the OS commands is selected from the group consisting of:

- (a) depressing a virtual key displayed on a screen;
- (b) moving a curser appearing on a screen (Paragraph [0137])
- (c) running on the processor a software application;
- (d) turning a light on or off;
- (e) turning off the system;
- (f) zooming in or out of a picture on a screen;
- (g) adjusting a radio or other entertainment device;
- (h) adjusting a medical device; and
- (i) sending a command to an application.

Regarding claim 10, Horiki discloses a data processing device comprising the system for inputting operation system (OS) commands according to claim 1 (Figure 6).

Regarding claim 11, Horiki discloses the data processing device according to claim 10, wherein the device is selected from the group consisting of: a personal computer (PC), a portable computer, a PDA, a laptop, a palm plot, or mobile telephone, a radio, a digital camera a vehicle, a medical device, a smart home appliance, and a mobile game machine (Figure 6).

Regarding claim 12, this claim is rejected under the same rationale as claim 1.

Regarding claim 13, this claim is rejected under the same rationale as claim 2.

Regarding claim 14, this claim is rejected under the same rationale as claim 3.

Regarding claim 15, this claim is rejected under the same rationale as claim 4.

Regarding claim 16, this claim is rejected under the same rationale as claim 5.

Regarding claim 17, this claim is rejected under the same rationale as claim 6.

Regarding claim 18, this claim is rejected under the same rationale as claim 7.

Regarding claim 19, this claim is rejected under the same rationale as claim 8.

Regarding claim 20, this claim is rejected under the same rationale as claim 9.

Regarding claim 21, this claim is rejected under the same rationale as claim 1 plus see paragraph [0151].

Regarding claim 22, this claim is rejected under the same rationale as claim 1 plus see paragraph [0151].

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

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3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horiki (US 2002/0140667) in view of AAPA (Specification, page 2, line 22 to page 3, line 2).

Regarding claim 2, Horiki discloses the system according to claim 1.

Horiki fails to explicitly teach wherein detecting a predetermined object in one or more images obtained by the camera is carried out using a segmentation algorithm.

AAPA discloses that using segmentation algorithms are well known in the art (Specification, page 2, line 22 to page 3, line 2) and therefore, it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to use a segmentation algorithm as taught by AAPA in the system taught by Horiki in order to achieve the predictable result of providing an algorithm that would detect the finger

12. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horiki (US 2002/0140667).

Regarding claim 4, Horiki discloses the system according to claim 1.

Horiki fails to explicitly teach wherein one or more of the image analysis parameters is history independent, however, since it is not disclosed as being essential to the invention, it would have been an obvious design choice to "one of ordinary skill" in

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the art at the time the invention was made to make the image analysis either history dependent or independent depending upon the design characteristics of the device.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN G. SHERMAN whose telephone number is (571)272-2941. The examiner can normally be reached on M-F, 7:30 a.m. - 4:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Stephen G Sherman/

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9 July 2010